IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A method for rasterizating an image on a display that is divided into a plurality of selected regions, wherein the image is decomposed into one or more convex polygons, each convex polygon defined a plurality of original edges, wherein each original edge is defined by a first vertex and a second vertex, the method comprising the steps of:

truncating coordinates of the first vertex to a preselected precision, the truncated coordinates of the first vertex defining a first truncated vertex;

truncating coordinates of the second vertex to the preselected precision, the truncated coordinates of the second vertex defining a second truncated vertex;

generating coordinates for a first modified vertex by adjusting the first truncated vertex according to characteristics of the original edge;

generating coordinates for a second modified vertex by adjusting the second truncated vertex according to the characteristics of the original edge, wherein the first modified vertex and the second modified vertex defining a modified edge of the polygon for each original edge; and

if a first selected region intersects a second region defined by the modified edges, then refreshing the first selected region on the display.

2.   (Original) The method of claim 1, further comprising the steps of:
receiving the coordinates for the first vertex of an original edge; and
receiving the coordinates for the second vertex of the original edge.

3.   (Original) The method of claim 1, wherein the step of truncating coordinates of a first vertex further comprising the step of eliminating a fractional part of the coordinates of the first vertex.

4.   (Original) The method of claim 1, wherein the step of generating coordinates for a first modified vertex further comprising the steps of:

if the original edge touches a top vertex of the convex polygon, then assigning a true condition to a first element, otherwise assigning a false condition to the first element;

if the original edge is on left of the interior of the convex polygon, then assigning a true condition to a second element, otherwise assigning a false condition to the second element;

if the original edge has a negative slope, then assigning a true condition to a third element, otherwise assigning a false condition to the third element;

if the first truncated vertex and the second truncated vertex defines an edge parallel to a x-axis, then assigning a true condition to a fourth element, otherwise, assigning a false condition to the fourth element;

if the first truncated vertex and the second truncated vertex defines an edge parallel to a y-axis, then assigning a true condition to a fifth element, otherwise assigning a false condition to the fifth element;

deriving a first pair values based on the first element, the second element, the third element, the fourth element, and the fifth element; and

adding the first pair values to the truncated coordinates of the first vertex.

5.   (Original) The method of claim 1, wherein the step of generating coordinates for a first modified vertex further comprising the steps of:

retrieving a first pair values from a table; and

adding the first pair values to the truncated coordinates of the first vertex.

6.   (Original) The method of claim 1, wherein the convex polygon is a triangle.

7.   (Original) The method of claim 1, wherein the convex polygon is a convex quad.

8.   (Currently Amended) A <u>computer program product on a computer readable medium including a</u> table for deriving adjustment values for coordinates of truncated vertices, the table being used in rasterizing computer graphics, the table comprising: a plurality of entries wherein each entry having a top vertex indicator, a left region indicator, a negative slope indicator, a x-axis parallel indicator, a y-axis parallel indicator, a top pair adjustment values, and a bottom pair adjustment values.

9.   (Original) The table of claim 8, wherein the x-axis parallel indicator may indicate one of the following conditions: true, false, or ignore.

10.   (Original) The table of claim 8, wherein the y-axis parallel indicator may indicate one of the following conditions: true, false, or ignore.

11.   (Currently Amended) A computer readable medium on which is stored a computer program that rasterizes an image on a display that is divided into a plurality of selected regions, wherein the image is decomposed into one or more convex polygons, each convex polygon defined a plurality of original edges, wherein each original edge is defined by a first vertex and a second vertex, the computer program comprising instructions, which when executed by a computing device performs the steps of:

truncating coordinates of the first vertex to a preselected precision, the truncated coordinates of the first vertex defining a first truncated vertex;

truncating coordinates of the second vertex to the preselected precision, the truncated coordinates of the second vertex defining a second truncated vertex;

generating coordinates for a first modified vertex by adjusting the first truncated vertex according to characteristics of the original edge;

generating coordinates for a second modified vertex by adjusting the second truncated vertex according to the characteristics of the original edge, wherein the first modified vertex and the second modified vertex defining a modified edge <u>of the polygon</u> for each original edge; and

if a first selected region intersects a second region defined by the modified edges, then refreshing the first selected region on the display.

12.   (Original) The computer program of claim 11, further comprising the steps of:

receiving the coordinates for the first vertex of an original edge; and receiving the coordinates for the second vertex of the original edge.

13.   (Original) The computer program of claim 11, wherein the step of truncating coordinates of a first vertex further comprising the step of eliminating a fractional part of the coordinates of the first vertex.

14.   (Original) The computer program of claim 11, wherein the step of generating coordinates for a first modified vertex further comprising the steps of:

if the original edge touches a top vertex of the convex polygon, then assigning a true condition to a first element, otherwise assigning a false condition to the first element;

if the original edge is on left of the interior of the convex polygon, then assigning a true condition to a second element, otherwise assigning a false condition to the second element;

if the original edge has a negative slope, then assigning a true condition to a third element, otherwise assigning a false condition to the third element;

if the first truncated vertex and the second truncated vertex defines an edge parallel to an x-axis, then assigning a true condition to a fourth element, otherwise assigning a false condition to the fourth element;

if the first truncated vertex and the second truncated vertex defines an edge parallel to a y-axis, then assigning a true condition to a fifth element, otherwise assigning a false condition to the fifth element;

deriving a first pair values based on the first element, the second element, the third element, the fourth element, and the fifth element; and

adding the first pair values to the truncated coordinates of the first vertex.

15.   (Original) The computer program of claim 11, wherein the step of generating coordinates for a first modified vertex further comprising the steps of: retrieving a first pair values from a table; and

adding the first pair values to the truncated coordinates of the first vertex.

16.   (Original) The computer program of claim 11, wherein the convex polygon is a triangle.

17.   (Original) The computer program of claim 11, wherein the convex polygon is a convex quad.

18.   (Currently Amended) A system for rasterizing on a display a convex polygon with a plurality of original edges, wherein each original edge is defined by two vertices and each original edge derives a modified edge <u>of the polygon</u>, the modified edge is used to determine whether a selected region of the display intersects the corresponding edge, the system comprising:

a controller;

a rasterizer connected to the controller;

a display interface unit connected to the rasterizer, the display interface unit receiving rasterized data from the rasterizer and transmitting the rasterized data to a display unit; and

a storage unit for storing data used during the rasterization process,

wherein the rasterizer being capable of rasterizing an image on the display device divided into a plurality of preselected regions, wherein the image is decomposed into one or more convex polygons, each convex polygon defined a plurality of original edges, wherein each original edge is defined by a first vertex and a second vertex, by executing the steps of:

truncating coordinates of the first vertex to a preselected precision, the truncated coordinates of the first vertex defining a first truncated vertex;

truncating coordinates of the second vertex to the preselected precision, the truncated coordinates of the second vertex defining a second truncated vertex;

generating coordinates for a first modified vertex by adjusting the first truncated vertex according to characteristics of the original edge;

generating coordinates for a second modified vertex by adjusting the second truncated vertex according to the characteristics of the original edge, wherein the first modified vertex and the second modified vertex defining a modified edge for each original edge; and

if a first selected region intersects a second region defined by the modified edges, then refreshing the first selected region on the display.

19.   (Original) The system of claim 18, wherein the rasterizer further executes the steps of:

   receiving the coordinates for the first vertex of an original edge; and receiving the coordinates for the second vertex of the original edge.

20.   (Original) The system of claim 18, wherein the step of truncating coordinates of a first vertex further comprising the step of eliminating a fractional part of the coordinates of the first vertex.

21.   (Original) The system of claim 18, wherein the step of generating coordinates for a first modified vertex further comprising the steps of:

   if the original edge touches a top vertex of the convex polygon, then assigning a true condition to a first element, otherwise assigning a false condition to the first element;

   if the original edge is on left of the interior of the convex polygon, then assigning a true condition to a second element, otherwise assigning a false condition to the second element;

   if the original edge has a negative slope, then assigning a true condition to a third element, otherwise assigning a false condition to the third element;

   if the first truncated vertex and the second truncated vertex defines an edge parallel to an x-axis, then assigning a true condition to a fourth element, otherwise assigning a false condition to the fourth element;

   if the first truncated vertex and the second truncated vertex defines an edge parallel to a y-axis, then assigning a true condition to a fifth element, otherwise assigning a false condition to the fifth element;

   deriving a first pair values based on the first element, the second element, the third element, the fourth element, and the fifth element; and

   adding the first pair values to the truncated coordinates of the first vertex.

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22.   (Original) The system of claim 18, wherein the step of generating coordinates for a first modified vertex further comprising the steps of:

        retrieving a first pair values from a table; and

        adding the first pair values to the truncated coordinates of the first vertex.

23.   (Original) The computer program of claim 18, wherein the convex polygon is a triangle.

24.   (Original) The computer program of claim 18, wherein the convex polygon is a convex quad.